<u>REMARKS/ARGUMENTS</u>

Favorable reconsideration of this application is respectfully requested.

Claims 1-4 and 6-23 are pending in this application. Claims 1, 6, 7, and 11-15 have

been amended to improve the clarity thereof without the addition of any new matter. Claim 5

has been canceled without prejudice or disclaimer.

The outstanding Office Action includes an objection to the specification, a rejection of

Claims 1-23 under the second paragraph of 35 U.S.C. §112, a rejection of Claims 1-5, 7-10,

13, 14, 16, and 18-23 under 35 U.S.C. §102(e) as being anticipated by <u>Divsalar</u> (U.S. Patent

No. 6,023,783), and a rejection of Claim 6 and 7 under 35 U.S.C. §103(a) as unpatentable

over <u>Divsalar</u>.

It is believed that the objection to the specification should be withdrawn in view of the

amendment to page 1 of the specification that presents the Title without the word "title" as

required.

The outstanding Action repeats the rejection of Claims 1-23 under the second

paragraph of 35 U.S.C. §112 as being "incomplete for omitting essential elements," yet the

bottom of page 6 of the outstanding Action once again fails to address where in the

specification the PTO finds the MPEP §2172.01 (Rev. 1, Feb. 2003) required disclosure of the

"association or actual relationships between 'the said plurality of elementary coding steps' and

the 'plurality of adapted interleaving and deinterleaving steps'" as somehow being "**essential**."

In this regard, the PTO errs in indicating that MPEP §2172.01 (Rev. 1, Feb. 2003) guidelines

suggests that a **proper** rejection under the second paragraph of 35 U.S.C. §112 can be made

upon a mere assertion that the claims are "incomplete for omitting essential elements, such

omission amounting to a gap between elements." Nothing in MPEP §2172.01 (Rev. 1, Feb.

2003) permits an examiner to **subjectively** determine what that examiner believes are

"**essential**" elements the omission of which in the claims amounting to a gap between claimed

elements. Instead, MPEP §2172.01 (Rev. 1, Feb. 2003) instructs examiners that the proper

performance of their duties requires them to determine what are "essential elements of the

invention" by reviewing "the invention **as defined by applicant(s) in the specification**"

(emphasis added). Thus, as noted by the court in In re Borkowski, 162 USPQ 642, 645

(CCPA 1970) it is improper for any examiner "to formulate a conclusion as to what he (the

examiner) regards as the broadest invention supported by the disclosure, and then to determine

whether appellants' claims are broader than the examiner's conception of what "the invention"

is."

If the outstanding Action properly consider the "the invention **as defined by

applicant(s) in the specification**" (emphasis added), the indication of page 13 of the

specification as to the well known nature of elementary coders using interleaving, it should

have been understood that elementary coding and interleaving are not new elements and that

the artisan fully understands what is involved in elementary encoding steps being "associated"

with interleaving steps. Just as the Artisan is well aware of the association of elementary

encoding steps with interleaving steps, that artisan is likewise aware of how the decoding

procedure must work with elementary decoders and associated de-interleaving corresponding

to the interleaving described at pages 14-15 of the specification, for example. Thus, the

associations between elementary encoding with interleaving and the association between

elementary decoding with de-interleaving as well as the known manner that the de-

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interleaving corresponds to the interleaving are elements workers of ordinary skill could

readily optimize for a given situation. Clearly these known relationships are not ones that

need to be set forth in great detail in either the specification or claims.

As the previous claim language was perhaps confusing as to the elementary decoding

relationship to associated de-interleaving determined by the interleaving associated with the

with elementary coding, Claim 1 has been modified to better set forth these relationships. The

cancellation of Claim 5 renders its rejection on this ground moot.

In light of the foregoing, withdrawal of the rejection of Claims 1-4 and 6-23 under the

second paragraph of §112 is respectfully submitted to be in order.

With regard to the rejection of Claims 1-5, 7-10, 13, 14, 16, and 18-23 under 35

U.S.C. §102(e) as being anticipated by Divsalar, it is noted that the rejection applied to Claim

5 is now relevant to Claim 1 as Claim 5 subject matter is now included in Claim 1. The

rejection of Claim 5 was based on interpreting L_{1k}, L_{2k}, and L_{3k} to be the claimed

"characteristic quantity including a statistical function associated with the elementary

decoding steps." However, as explained in the last response, the L_{1k}-L_{3k} likelihood ratios are

not characteristic quantities at all, much less ones calculated as claimed. Furthermore, the

outstanding action does not answer the following points from page 16 of the previous

response:

> The explanation of the rejection then suggests that the Claim 1 step of
> "calculating at least one characteristic quantity from a set of the weighted output
> information items" is somehow taught by the FIG. 20B showing of L_{1k}-L_{3k} outputs
> from corresponding Map or Sova steps being input to inverse interleaving steps is
> further not seen to be a reasonable interpretation. Even if it could be said that L_{1k}-L_{3k}
> are somehow reasonably said to be "calculated characteristic quantities" as urged at the
> top of page 8 of the outstanding Action, the manner it can be reasonably said that L_{1k}-

L_{3k} are somehow calculated from the stage outputs of $L_1(m+_1)$, $L_2(m+1)$ is not at all clear. If anything, the providing of the L_{1k}-L_{3k} as outputs from corresponding Map or Sova steps to the inverse interleaving processing for eventual subtraction by $L(m)$ components to generate $L_1(m+1)$, and $L_3(m+1)$ seem to only logically indicate that $L_1(m+1)$, $L_2(m+1)$, and $L_3(m+1)$ are calculated in part based upon the L_{1k}-L_{3k} outputs and not vice-versa.

MPEP §707.07(f) requires that all of the arguments presented are to be responded to when a rejection is repeated.

Moreover, Claim 1 does not require a characteristic quantity for a particular bit as asserted on page 8 of the outstanding Action. Instead, the requirement is for a "characteristic quantity including a statistical function associated with the elementary decoding steps." Thus, the limitation is not that the characteristic quantity is any possible statistical function as apparently misinterpreted in the outstanding Action.

Turning to the rejection of Claims 6 and 7 under 35 U.S.C. §103(a) as unpatentable over <u>Divsalar</u>, it is first noted that the rejection in the outstanding rejection simply relies upon the last Action (mailed 06/20/03) that in turn relies on an unsupported estimate of expertise in the art to derive the modification being suggested from thin air. However, a rejection lacking any evidence in the record as to a core factual finding required for a determination of patentability is clearly improper. In this last regard, the court in <u>In re Zurko</u>, 59 USPQ2d 1693, 1697-98 (Fed. Cir. 2001) noted the following:

> Finally, the deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is "basic knowledge" or "common sense" to one of ordinary skill in the art. As described above, the Board contended that even if the cited UNIX and FILER2 references did not disclose a trusted path, "it is basic knowledge that communication in trusted environments is performed over trusted paths" and, moreover,

verifying the trusted command in UNIX over a trusted path is "nothing more than good common sense." Ex parte Zurko, slip op. at 8. We cannot accept these findings by the Board. This assessment of basic knowledge and common sense was not based on any evidence in the record and, therefore, lacks substantial evidence support. As an administrative tribunal, the Board clearly has expertise in the subject matter over which it exercises jurisdiction. This expertise may provide sufficient support for conclusions as to peripheral issues. With respect to core factual findings in a determination of patentability, however, the Board cannot simply reach conclusions based on its own understanding or experience — or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings. To hold otherwise would render the process of appellate review for substantial evidence on the record a meaningless exercise. *Baltimore & Ohio R.R. Co. v. Aderdeen & Rockfish R.R. Co.*, 393 U.S. 87, 91-92 (1968) (rejecting a determination of the Interstate Commerce Commission with no support in the record, noting that if the Court were to conclude otherwise "[t]he requirement for administrative decisions based on substantial evidence and reasoned findings — which alone make effective judicial review possible —would become lost in the haze of so-called expertise"). Accordingly, we cannot accept the Board's unsupported assessment of the prior art. [Emphasis added, footnote omitted.]

Further note In re Rouffet, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998) as follows:

This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In this case, the Board relied upon none of these. Rather, just as it relied on the high level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, it relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a

patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.

Accordingly, if the rejection is again repeated, these points should be addressed as MPEP §707.07(f) requires

With further regard to Clam 7, it is clear that equation (30) of column 19 of Divsalar is a general formulation for computing output extrinsic information for an elementary decoder from the input information coming from channel observation and extrinsic information produced by the other elementary decoders. Equation (30) outputs state of the art extrinsic information that will be used by the other elementary decoders.

However, the statistical function of Claim 7 is not related to equation (30) of Divsalar because it takes place after the extrinsic information is provided by equation (30). Thus, replacing equation (30) by the statistical function (mean of the absolute values, for instance, as suggested in the Action) will not have the same effect as equation (30) and will not produce weighted output information that can be used by the other elementary decoders. The effect obtained by the statistical function of Claim 7 is different from producing extrinsic information because the aim is to produce a quality indicator of the weighted information (which is the extrinsic information in a particular embodiment). There is no teaching or suggestion of this to be found in Divsalar. Again, if this rejection is repeated, the dictates of MPEP §707.07(f) must be followed.

Therefore the rejection of Claims 6 and 7 under 35 U.S.C. §103(a) as unpatentable

over <u>Divsalar</u> is traversed for the reasons noted above.

As Claims 2-4 and 8-23 all depend ultimately on Claim 1, these Claims clearly define

over <u>Divsalar</u> for the same reasons as Clam 1 as well as because of the subject matter that each

adds to that of Claim 1 that is further not taught or suggested by <u>Divsalar</u>.

As no other issues are believed to remain outstanding relative to this application, it is

believed to be clear that this application is in condition for formal allowance and an early and

favorable action to this effect is, therefore, respectfully requested.

Respectfully submitted,

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